



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/866,822

05/29/2001

Dagnachew Birru

US 010264

5104

24737

7590

08/15/2006

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

WARE, CICELY Q

ART UNIT

PAPER NUMBER

2611

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/866,822

Applicant(s)

BIRRU, DAGNACHEW

Examiner

Cicely Ware

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2006.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 10-12 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-4 and 10-12 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____.
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Lim (US Patent 5,748,674) (cited by applicant) in view of Kim et al. (US Patent 6,807,229) in further view of Tsujimoto (US Patent 5,345,476).

(1) With regard to claim 1, Lim discloses in (Fig. 6) first (50) and second (60) feedback equalizer signals for controlling a decision feedback equalizer, wherein the first feedback equalizer signal is supplied as output from a first feedback loop (50, 70, 20, 30) and is delayed by an implementation delay (50b) wherein said first and second feedback loops process decisions from a decision device (30) common to both of said first and second loops (abstract, col. 5, lines 30-36, 51, 58).

However Lim does not disclose wherein the second feedback equalizer signal is supplied as output from a second feedback loop and is free of the implementation delay.

However Kim et al. discloses wherein the second feedback equalizer signal is supplied as output from a second feedback loop and is free of the implementation delay (col. 3, lines 4-14, 30-34, 49-64, col. 4, lines 1-44).

Therefore it would have been obvious to one of ordinary skill in the art to modify Lim in view of Kim et al. to incorporate wherein the second feedback equalizer signal is supplied as output from a second feedback loop and is free of the implementation delay in order to alleviate the large amount of current that is consumed in order to operate the DFE (Kim et al., col. 1, lines 56-63).

However Lim in combination with Kim et al. do not disclose wherein the output of the decision feedback equalizer is common with an input of the decision device.

However Tsujimoto discloses in (Fig. 2) wherein the output of the decision feedback equalizer is common with an input of the decision device (15) (Fig. 1 (7)).

Therefore it would have been obvious to one of ordinary skill in the art to modify the inventions of Lim in combination with Kim et al. in view of Tsujimoto to incorporate wherein the output of the decision feedback equalizer is common with an input of the decision device in order to cancel multipath fading interference without causing cancellation of the desired signals and eliminate the noise enhancement problem without a training sequence (Tsujimoto, col. 2, lines 5-7).

3. Claims 2, 3, 10, 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsujimoto (US Patent 5,345,476) in view of Kim et al. (US Patent 6,807,229).

(1) With regard to claim 2, Tsujimoto discloses in (Fig. 2) a decision feedback equalizer, comprising: a forward equalizer(12); first and second adders (col. 2, lines 36-45); a decision device (15); a feedback equalizer (17) and an N-tap filter, wherein: the first and second adders (col. 2, lines 36-45), the decision device and feedback equalizer

constitute a first feedback loop (abstract); the second adder, the decision device (15), and the N-tap filter constitute a second feedback loop (abstract) and N is a positive integer (abstract, col. 6, lines 38-41, 67-68 – col. 7, line 1).

However Tsujimoto does not disclose the second feedback loop is free of an implementation delay associated with the first feedback loop.

However Kim et al. discloses wherein the second feedback equalizer signal is supplied as output from a second feedback loop and is free of the implementation delay (col. 3, lines 4-14, 30-34, 49-64, col. 4, lines 1-44).

Therefore it would have been obvious to one of ordinary skill in the art to modify Tsujimoto in view of Kim et al. to incorporate wherein the second feedback equalizer signal is supplied as output from a second feedback loop and is free of the implementation delay in order to alleviate the large amount of current that is consumed in order to operate the DFE (Kim et al., col. 1, lines 56-63).

(2) With regard to claim 3, claim 3 inherits all the limitations of claim 2. Tsujimoto further discloses wherein the N-tap filter is implemented (abstract, col. 5, lines 30-54, col. 6, lines 1-4, 38-60, col. 7, lines 3-24).

(3) With regard to claim 10, see rejection of claim 2. Tsujimoto further discloses in (Fig. 2) a decision feedback equalizer, comprising: a forward equalizer (12); a decision device (15), filter means for generating a first feedback signal (17) responsive to first filter coefficients optimized to process postcursor echoes adjacent to a main channel and a second feedback signal (18) responsive to second filter coefficients optimized to process all other postcursor echoes; and means for applying the first (12,

Art Unit: 2611

14, 15, 17) and second (12, 13, 14, 15, 18, 19, 20) feedback signals to thereby control the DFE, wherein the number of second filter coefficients is much greater than the number of first filter coefficients (abstract, col. 2, lines 28-36, col. 7, lines 3-24).

(4) With regard to claim 12, see rejection of claims 10 and 2.

4. Claims 4 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsujimoto (US Patent 5,345,476) in view of Kim et al. (US Patent 6,807,229) as applied to claims 2,4 and 10, in further view of Lim (US Patent 5,748,674) (cited by applicant).

(1) With regard to claim 4, claim 4 inherits all the limitations of claim 2. Tsujimoto in combination with Kim et al. disclose all the limitations of claim 2.

However Tsujimoto in combination with Kim et al. do not disclose a digital television receiver including the DFE.

However Lim discloses a digital television receiver including the DFE (col. 2, lines 22-29).

Therefore it would have been obvious to one of ordinary skill in the art to modify the inventions of Tsujimoto in combination with Kim et al. in view of Lim to incorporate a digital television receiver including the DFE in order to allow for the symbol transfer rate (symbol/s) of the digital signal to be increased, the need for a high speed feedforward filter and feedback filter increases, so that a higher order filter is generally used (Lim, col. 2, lines 18-21).

(2) With regard to claim 11, claim 11 inherits all the limitations of claim 10. See rejection of claim 4.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Cicely Ware

cqw
August 2, 2006


KHAI TRAN
PRIMARY EXAMINER